

Application of Current Gap between Research and Classroom Practices Instructional Methodology by Secondary School Geography Teachers in Central Plateau, Nigeria

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Abstract - *The study investigated the application of current gap between research and classroom practice. It was particularly directed at studying the application of three active instructional strategies by geography teachers in central plateau as a litmus test of compliance to research advocacy in education. The stratified random sampling method was used to select a sample of 64 geography teachers used for the study. Mean score and t-test of independent were employed for the analysis of data for the study. The result of analysis revealed that the three active methods: experiential learning, inquiry-based learning and collaborative learning were not significantly adopted by the teachers. This phenomenon did not differ significantly between geography teachers in private and public schools. It was therefore recommended that government should provide opportunity and create the enabling environment for teacher's self-development. This is in addition to making attendance of workshops, seminars and conferences part of the requirements for the promotion of teachers for instructional methodology for the geography teaching in plateau state Nigeria.*

Keywords - *Current Gaps, Research, Classroom Teaching Instructional Methodology and Geography Teachers*

INTRODUCTION

The scientific and technological revolution witnessed in the last two decades in the global community, coupled with the dramatic expansion in population size and development pattern have

unleashed great negative impact on the environment. Environmental degradation at the global, national, regional and local level are challenges that can be understood and addressed more squarely by the geographer. This informed why geography has always been associated with man – environment relationship since inception [1]. Geography, therefore is fixated with the question of human habitat as the planet earth is as yet the only living environment of man. Achinugu (2009) therefore proclaimed that if humanity must survive, the problem of global warming, ozone layer depletion, greenhouse effect and the seriously altered biosphere must be addressed head on and the human activities that contribute to the degradation of our environment guided against. This question of human habitat as pointed out by Singh [1] has aroused the concern of the united nation for concerted effort towards the protection and maintenance of the quality of the environment.

Geography education as an interdisciplinary science is a most likely candidate to more adequately respond to the demand for a sustainable environment, echoed the world over. The demand calls for a sound classroom teaching of the subject in a manner that the content and the process of learning is adopted to keep pace with new development and best practices as revealed by research evidences. Thus, geography should be taught to agree with the general goal of science education in the 21th century. Osisioma [2] proposes that the general goal of science education is to prepare individuals for improving their own lives and for coping with an increasingly technological world. The demand of this goal implies that teachers

must be engaged in quality classroom instruction if they must succeed in their jobs. This is so because most effective teachers are those who are well informed regarding modern pedagogical principles and able to translate these principles of teaching and learning into effective practice [3]. This means that teaching and learning should be divorced from the old ways of doing things and embrace new innovations in the business of educating. Thus, the gap between research and practical classroom teaching should be bridged through teacher's conscientious self-development and application of theory and research in their day-to-day practice. This is necessary because science education, geography inclusive, relies on a wide variety of research based methodologies [2]. He thus emphasized that the practice of science education have become increasingly informed through research on science teaching and learning.

The common emphasis in science education all over the world as stated by Ottevanger, Afker and Feither (2007) is active learning approach which is emphasized in curriculum policies. This development is not based on mere assumption, but informed by many years of diligent research across the globe. For instance, Bednarz [4] conducted an analysis of research in geography education in the united states of America between 1988 and 1997 and found that researches in the sub field of teaching methods surpasses that of other subfields. He found that 192 (55%) of the 347 researches conducted during the period were in the subfield of teaching strategies. While the remaining 36 (10%), 55 (16%) and 64 (18%) were in the subfield of thinking and teaching, institutional studies and general interest in geography respectively. This underscores the importance of teaching as a critical factor in geography education. As earlier stated, active learning is the current emphasis in teaching and learning. Active learning stresses learners-centered education, believed to possess the power to develop in learners the capacity for scientific, critical and reflective thinking as they learn together and construct knowledge. In this vent, the National Geographical Research and Exploration (NGRE) [5] proclaimed that methodological transformation inculcates scientific attitude in learners who would think critically, reflectively and acquire relevant geographical knowledge and skills. NGRE strongly belief that active approach to the study of geography would provide learners with necessary tools and techniques for understanding their world and become sound decision makers with respect to

problems of air, water and land pollution, locational issues, international economic issues, political issues and administrative matters. Research in recent past in Nigeria however show that geography teachers have adapted poor approach to teaching the subject. For instance Dakur [6] and Obasi [7] have found that inappropriate or non-use of modern teaching strategies by the geography teachers is factors militating against geography education in Nigeria. Filibus [8] found that most geography teachers do not take their students out for practical lesson.

Joel [9] confirmed that most geography teachers in Nigerian secondary schools do not employ the right method of teaching that would make the learning of the subject meaningful. Akinmade [10] informed that research and best practice have not been used for turning our vision into reality. This means that teachers do not foster good balance between research advocacy and their teaching. This study is aimed at determining the extent to which this imbalance is greatly reduced in the present time. This will be investigated in the light of the extent to which geography teachers apply three active methods of learning: experiential learning, inquiry learning and collaborative learning methods. The tenets of these methods will form the basis of this investigation. However the active instructional methods advocated by Akinmade [10] was inquiry, questioning and project method. The author said that the active inquiry method will aid effective teaching of geography.

Students' academic achievement in geography at the senior secondary level today, as in the past years, has left much to be desired. Summary of the West African Senior School Certificate Examination (WASSCE) between 2000 and 2005 by the councils test development division reveals that their percentage pass in credit and above ranges from 15 to 39 with the highest in 2005 and the lowest in 2004. The chief examiners report of WASSCE for 2014 decries that the performance of the candidates fell below that of the previous years with identified weakness as inadequate preparation, mere listing of points, poor map illustrations and misinterpretation of questions. This point to the fact that much need to be done to achieve the purpose of geography education at the senior secondary school level. This study is an attempt to contribute to addressing this problem in the area of teacher's application of active learning instructional strategies.

PURPOSE OF THE STUDY

The purpose of the study is to establish, the application of the current gap between research and classroom practices in the teaching in the context of teacher's use of active learning instructional method. This is motivated by the present research advocacy for active learning in which learners are no longer passive recipient of knowledge but active co-constructors of knowledge with their teachers and colleagues. The specific objectives of the study include the following: to determine the extent to which geography teachers use experiential learning in senior secondary schools; to investigate the extent to which geography teachers apply inquiry-based instructional strategy in senior secondary schools; to find out the extent to which geography teachers adopt collaborative learning instructional approach in senior secondary schools; and to investigate the effect of school type on the extent to which geography teachers adopt the three active learning methods.

HYPOTHESES OF THE STUDY

Three hypotheses were postulated and tested in the course of the study as follows: there is no significant mean difference in application of experiential learning of private and public schools geography teachers; there is no significant mean difference in the application of inquiry-based learning of private and public schools geography teachers; and there is no significant mean difference in the application of collaborative learning of private and public schools geography teachers.

THEORETICAL FRAMEWORK

The study derives its theory underpinning from the constructivist theory of learning. The psychological and social constructivism of Piaget and Vygotsky respectively underpin the study. Piaget constructivism posits that education is aimed at meeting the need and interest of the child in terms of cognitive development; so the approach to education should be child-centered through scientific approach. Vygotskian constructivism on the other hand, emphasizes the social transformation function of education and thus advocates approach to education that places the learners within a socio-cultural context. The social constructivism theorize that proper learning occurs as a result of interaction within which cultural meanings are shared by the group of learners and eventually internalized by the individual. Thus, the individual construct knowledge in transaction within

the environment, and in the process, both the individual and the environment are changed. Vygotskian constructivism therefore proclaim that the process of learning is dialectic relationship between the individual and the social and cultural milieu.

The psychological constructivism as explains by Siddiqui (2008), believe that students come to the class with ideas, beliefs and opinion that need to be altered or modified by the teachers who facilitate this alteration by devising tasks and questions that create dilemmas for students. The theory stresses that students construct knowledge as a result of the dilemmas created by the teachers. The constructivist's approach therefore involves discovery learning and hand-on activities such as using manipulative, students tasks that challenge existing concepts and thinking process, questioning techniques that probe students beliefs and encourage examination and testing of these beliefs.

To summarize, constructivism maintains that individuals create or construct their own new understanding or knowledge through the interaction of what they already know and the activities and events with which they come in contact with. Knowledge is thus acquired through involvement with content rather than through imitation or repetition. Learning therefore occurs through active engagement, inquiry, problems-solving and collaboration with others, and the teachers serve as a guide and facilitator rather than a dispenser of knowledge.

The constructivist's theory is relevant to this study in the areas of student's centeredness, construction of knowledge by learners. Collaboration by learners in the process of learning, teacher's role as facilitators and use of questions in inquiring manner. These tenets are hallmark of active learning which are intrinsic to experiential learning, inquiry and collaborative-learning methods, the focus of this study.

METHODOLOGY

The study was carried out using the sample frame of the study is made of 201 geography teachers who teach senior secondary school students in central plateau. This number is made up of 86 female and 115 male teachers distributed over 90 public and 73 private schools in the study area. 99 and 102 of the teachers were teaching in public and private schools respectively. Sampling technique and sample: the stratified random sampling method was employed to select the sample for the study. All the schools name were written down and serially numbered in two

groups, A and B. Group A consist of private schools while Group B of public schools. A table of random number was used to select 31% each of the number of schools in each group. Based on this designation, 21 and 27 schools were selected from the private and public schools respectively. All the geography teachers in the selected schools were chosen as the sample for the study. This gave rise to 33 and 31 teachers from private and public schools in that order, making a total of 64 teachers used for the study. Instrument and procedure for data collection: Teacher's adoption of active learning method questionnaire (TAALQ) was developed, validated and used for the collection of data for the study. The instrument was constructed in four sections A, B, C and D and on a five point likert scale. Section A was tailored towards capturing data on the name and type of school. Sections B, C and D were directed at collecting data on teacher's use of experiential learning, inquiry and collaborative-learning methods respectively. Three experts, one each in geography education, curriculum theory, test and measurement from the University of Jos validated the instrument. The statistical method used was t-test of independent group used for testing the three hypothesis of the study.

RESULT

H0₁: There is no significant difference between the use of experimental method in the private and public school in the teaching of geography.

Table 1 shows that the calculated t-value of 1.36 is lowers than the critical t-value of 2.00 at degree of freedom of 62 and tested at .05 significance level. Since the calculated t is less than the there is sufficient evidence to accept the null hypothesis. This mean therefore that geography teachers do not differ significantly in the extent to which they use experiential learning on the basis of school type.

Table 1: Test of difference in geography teacher's use of experiential learning

Schools	N	\bar{X}	s	α	d	t-f	t-cal	t-tab	Decision
Private (x ₁)	33	2.6	0.98	0.05	62	0.29	2.00		H0 ₁ Accept
Public	44	2.9	2.61						

Hypothesis two: There is no significant difference between the teachers application of inquiry

based method in the teaching of geography in the private and public secondary schools in plateau state, Nigeria.

Table 2: Difference in geography teacher's application of inquiry-based instruction

Schools	n	\bar{X}	s	α	df	T	t-cal	t-tab	Decision
Private (x ₁)	33	2.6	0.98	0.05	62	0.29	2.00		H0 ₂ Accept
Public (x ₂)	31	2.7	0.84						

The hypothesis strives to test the extent to which the geography teachers differs in their application of inquiry-based instructional method in their classes based on school type. The t calculated (0.29) as shown in the table is less than the theoretical t (2.00). There was therefore no basis for rejecting the hypothesis. Hence, the null hypothesis was accepted. It mean that high significant difference in the level which the teacher apply inquiry based instruction in schools.

Hypothesis three: There is no significant difference between teachers application of collaborative learning instruction in the teaching of geography in the public and private secondary schools in Plateau State Nigeria.

The hypothesis is directed at finding out significant difference between geography teachers in private and public schools vis-a- vis the extent of adoption of collaborative learning instruction The data in table 3 shows vividly that the calculated t (0.27) is less than the table t value (2.00). This provides sufficient evidence for the hypothesis to be accepted. It is therefore logical to conclude that geography teachers in the study do not differ significantly in the adoption of collaborative learning on the basis of the type of school they teach.

Table 3: Application of collaborative instruction in the teaching of geography in the secondary schools.

Schools	N	\bar{X}	s	α	d	t-f	t-cal	t-tab	Decision
Private (x ₁)	33	2.6	0.98	0.05	62	0.27	2.00		Accept
Public	31	2.7	0.84						

DISCUSSION

The findings of this research study strongly indicate that geography teachers do not significantly

employ active-based instructional strategy in their curriculum delivery. This has far-reaching implications for the achievement of the nation's educational goal and national development. The current emphasis in science education should as suggested by Osisioma [2] be based on a wide variety of research based methodologies. Research reports today as ever before aviate active learning approach (Ottevanger, Akker & Feither, 2007). These suggest that much needs to be done to educate our teachers and to provide the enabling environment for wide and sufficient application of active learning instruction in our schools. Moreso, Nigeria cannot afford to jettison the national educational goal of preparing individual who are capable of improving their own lives and contribute to national development. This cannot be achieves without quality instruction based on research. Essentially, there is the need for bridging the gap between research and practice in our secondary schools pedagogy if we must succeed. This is to say that the geography teachers should vary their teaching methodology to include other methods.

RECOMMENDATIONS

Secondary school geography teachers should be given ample opportunity for self-development such as attendance of further studies, conferences, seminars and workshops. The national geography curriculum should be reviewed to provide sufficient room for the inclusion latest instructional methods. Ministry of education in collaboration with zonal and area directorate of education, should organize workshops for teachers on regular basis on latest instructional development. Attendance of workshops and seminars should be made part of the requirement for the promotion of teachers.

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